3R - 65

GENERAL CORRESPONDENCE

YEAR(S):

United States Department of the Interior
BUREAU OF RECLAMATION
UPPER COLORADO REGION
DURANGO PROJECTS OFFICE
P.O. BOX 640
DURANGO, COLORADO 81301

IN REPLY
REFER TO: 751
452.

JUL 2 1987

Mr. Roger C. Anderson
Energy and Minerals Department
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

RE: Your letter to Mr. Steve Reynolds concerning oil and gas industry related salt loading as discussed in the Department of Interior's Progress Report No. 13 "Quality of Water, Colorado River Basin".

Dear Mr. Anderson:

In July of 1986, we supplied information about three leaking wells or suspected leaking well locations to your office, some of which were not identified by location accurately. On April 3, 1987, you reported a summary of your investigations to Mr. Steve Reynolds conveying as much information as you were able to put together based on our sketchy information. We would like to improve or verify this information and ask a few more specific questions about these areas.

a) Mesa Petroleum, Navajo 32 No. 1 located in section 32 appears to be the leaking well that we were concerned about. We had given you the incorrect section number. This well was reported as being turned over to the Navajo Nation for stock water. At 6,270 mg/l total dissolved solids (TDS), this water is very poor quality for stock water. Additionally, there is a windmill fed stock tank with good quality water about 1/3 mile from this leaking well which makes its flow unnecessary. Is there a mechanism or process by which this well can be released from this use and plugged?

b) A private gas line in the town of Blanco, New Mexico, in the area of Amoco Candelaria Gas Community No. 1 and the Amoco Valencia Gas Community "B" No. 1M was mentioned as having numerous leaks in your summary to Mr. Reynolds. Is it possible that this leaking line could also be leaking saline water? If so, who is responsible for its operation and maintenance, where is it located, and are there procedures and/or funds that are used for repair of such facilities.

c) The well and seep that we identified as being in Section 26, T31N, R20W is actually in the NW1/4 of SE1/4 of NE1/4 of Section 27, T31N, R20W. Again, we had given you the incorrect section number. While ponded water around the leaking well head was about 3000 mg/l TDS (OK for stockwater quality), other seeps in the area had concentrations in excess of 8000 mg/l. Are there records on abandoned wells in this area?

Our concerns about salt loading from the Gary Energy Corporation Refinery in Bloomfield, New Mexico, is related to their on-land application of saline wastewater. Over the past year and a half we have observed frequent applications of an effluent having a TDS of 4,150 mg/l to an area of about 6 acres using three big gun sprinklers. These applications are made on an almost daily basis and by far exceed the potential evaporation rate from the surface of such a small area. Our investigations show this water to be percolating down through permeable upper aeolian soils until reaching a gravel and cobble lense which lies on top of the Niciemento shale. The water then flows through the gravels on the shale contact until daylighting in a small drainage to the east of the plant and along the hillside above the San Juan River. The water, as it emerges in the drainage crossing Sullivan Road, just to the east of the plant has a TDS of 9,380 mg/l.

The disposal area is contributing to a groundwater system which is perched on an impermeable saline aquiclude and is daylighted topographically on three sides, north, east, and west. Because of this, the total dissolved solids disposed of on the surface eventually make it into the San Juan River. Additionally, with little opportunity for concentration through evaporation, the increase in salinity is apparently due to a pick-up of salts from the underlying shale. In this particular case, there would be less total salt loading to the San Juan River if the effluent were directly discharged to the river. Although this does not necessarily hold true for other possible contaminants in the effluent, it is certainly a concept worth considering.

You mentioned in your summary to Mr. Reynolds that the refinery was permitted for unlined ponds as well as land application areas and we have observed two such ponds being built. This is of concern to us because ponding will provide opportunity for significantly increased head on that groundwater system. At present, we estimate about 460 tons per year TDS from the plant effluent are discharged as surface flows from the small drainage crossing Sullivan Road just to the east of the plant. This does not include discharge from the subsurface in the alluvium or from other hydraulic boundaries daylighted to surface drains around the plant. If there are metered records for disposal of this effluent, an accurate estimate of the refinery's salt loading contributions could be made. If these records are available, we would appreciate access to the information. If such records are not being kept, we would suggest that such information would be useful in assessing impacts and feasibility of economic control.

If you have any further information which might be helpful to us or have questions on the subject, please contact Steve Hansen or Errol Jensen of our office at 303-385-6500.

Sincerely yours,

Rick L. Gold

Rick L. Gold
Projects Manager

cc: Mr. S.E. Reynolds, State Engineer
State Engineer Office
Bataan Memorial Building
Santa Fe, New Mexico 87503

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

April 7, 1987

Mr. Rick L. Gold
U.S. Department of the Interior
Bureau of Reclamation
P.O. Box 640
Durango Colorado 81302-0640

RE: Department of Interior's Progress Report No. 13 "Quality of Water, Colorado River Basin"

Dear Mr. Gold:

Enclosed is a copy of the correspondence to the New Mexico State Engineer concerning possible oil industry contributions to Colorado River salt load. These are briefly discussed in the above referenced report. Several locations previously identified by you were checked by Oil Conservation Division and the information on the wells was given by telephone to your office late last summer.

If you have any questions or comments please do not hesitate to call me at (505) 827-5885

Sincerely,

Roger C. Anderson
Environmental Engineer

RA/cr

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☑ Telephone ☐ Personal | Time 0815 | Date 2/16/87

Originating Party	Other Parties
R Anderson	Ernie Busch - Hobbs OCD

Subject: Bifurcation Justification

Discussion: Gave the three sites to Ernie to investigate. He said he had [illegible] that [illegible] ... well, the site was a Compass Pet well that was turned over to the tribe (T. Indian 1-32) and was now being used as a water well for Dinetsel.

Conclusions or Agreements: Ernie said he would look out the three sites in Espanola area and get back with us.

Distribution

Signed R Anderson

STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS
STATE ENGINEER

BATAAN MEMORIAL BUILDING
STATE CAPITOL
SANTA FE, NEW MEXICO 87503

January 29, 1987

Mr. David G. Boyer
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504-2088

Dear Dave:

Herewith is a copy of the Department of the Interior's Progress Report No. 13, "Quality of Water Colorado River Basin." Your attention is invited to the discussion of the San Juan River Unit at pages VII-28 and 29, because some oil industry problems are discussed there.

Best regards,

Sincerely,

S. E. Reynolds
State Engineer

SER:pt
Attachment

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☐ Telephone ☒ Personal | Time | Date 7-28-86

Originating Party	Other Parties
R. Anderson	Frank Chavez OCD Farmington

Subject: Improperly plugged wells contributing to salt discharges to "River"

Discussion: After receiving information from Jack Generaux I researched the OCD well files to obtain owners of dry wells in the area of the discharges. One well was drilled by Mesa Pet - now operated by the tribe, the second was in a section operated by Amoco, and the third area did not have any records of wells. This information was given to Frank for follow up. Rick Gold of the Bureau of Rec was informed by phone of my findings

Conclusions or Agreements

Distribution

Signed R. Anderson

United States Department of the Interior
BUREAU OF RECLAMATION
UPPER COLORADO REGION
DURANGO PROJECTS OFFICE
P.O. BOX 640
DURANGO, COLORADO 81302-0640

IN REPLY
REFER TO: 710
123.8

JUL - 2 1986

Mr. Roger Anderson
Oil and Gas Commission
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Dear Mr. Anderson:

As a result of your telephone conversation with Jack Generaux, I am providing you the following information on flowing wells:

a) Well in T32N, R19W, sec. 29 or 32 flowing .06 to .08 ft^3/sec. at 6,270 mg/l T.D.S.

b) Well in T29N, R9W, sec. 18 NWNESW with standing water at 34,000 micromhos specific conductance.

c) Seep or well in T31N, R20W, sec. 26 NWNWNE with a small flow at 3,440 mg/l T.D.S.

We believe these may be abandoned wells. If you have additional information on these or other wells that may be discharging salty water or have any questions, please contact Jack at 303-247-0247.

Sincerely yours,

W. Martin Rocke

ACTING FOR Rick L. Gold
Projects Manager

Attachment

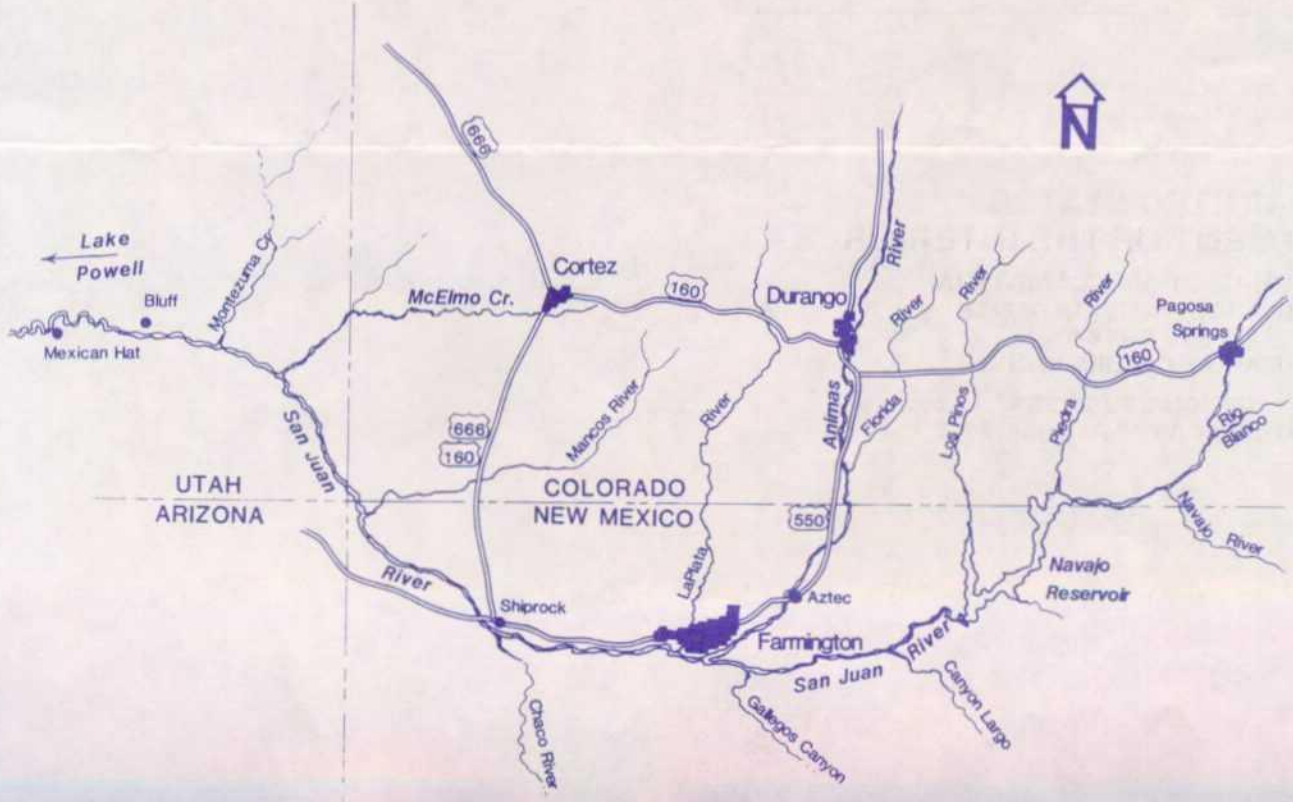
U.S. Department of the Interior
Bureau of Reclamation

Durango Projects Office
835 Second Avenue
P.O. Box 640
Durango, Colorado 81302

San Juan River Unit

April 1986

This newsletter, the first of several, describes the progress of Reclamation's salinity control investigation in the San Juan River Basin. This investigation is named the San Juan River Unit. The purpose of the four-year study will be to locate sources of salt discharged to the river by ground and surface water, such as shown in the picture, and to formulate control methods. The study area includes the entire San Juan River Drainage Basin from its headwaters in south-central Colorado to its mouth at Lake Powell (see map). The San Juan River Unit a part of the Colorado River Water Quality Improvement Program (CRWQIP), was authorized as part of the Colorado River Basin Salinity Control Act in 1972. Numerous areas located in the Colorado River Basin that contribute salt to the Colorado River are being investigated. In the Lower Colorado River Basin, high salinity adversely affects more than 18 million water users through increased water treatment cost and damages caused by saline water. One million acres of irrigated farm land in the United States are affected through reduced productivity.



The San Juan River drainage contribu[illegible] approximately one million tons of salt annually [illegible] the Colorado River. Early reconnaissance show significant salt loading in the river between Shiprock, New Mexico, and the Four Corners (see figure). At Bluff, Utah, the annual river flow of 2,047,000 acre-feet of water contains 1,165,000 tons of salt. Approximately 18 percent of this salt loading occurs between Shiprock and Bluff, but only 7 percent of the water is added in this reach.

Potential solutions to the salinity problem include improving irrigation systems or collecting and disposing of saline water. Ways to collect the salt water could include pumping or draining groundwater, and capturing surface flows. Disposal methods for the saline water could involve evaporation ponds, deep-well injection or desalinization. Saline water could also be used for industrial purposes such as coal slurry transport, cooling coal-fired generating plants, processing uranium, or secondary recovery in oil fields. Other control measures could include intercepting fresh water before it comes in contact with saline formations.

Anyone having specific interest in the study or suggestions should write or call collect **Jack Generaux, Study Team Leader,** at:

(303) 247-0247 Effective until June 22

(303) 385-6500 Effective June 23

ANTICIPATED STUDY SCHEDULE

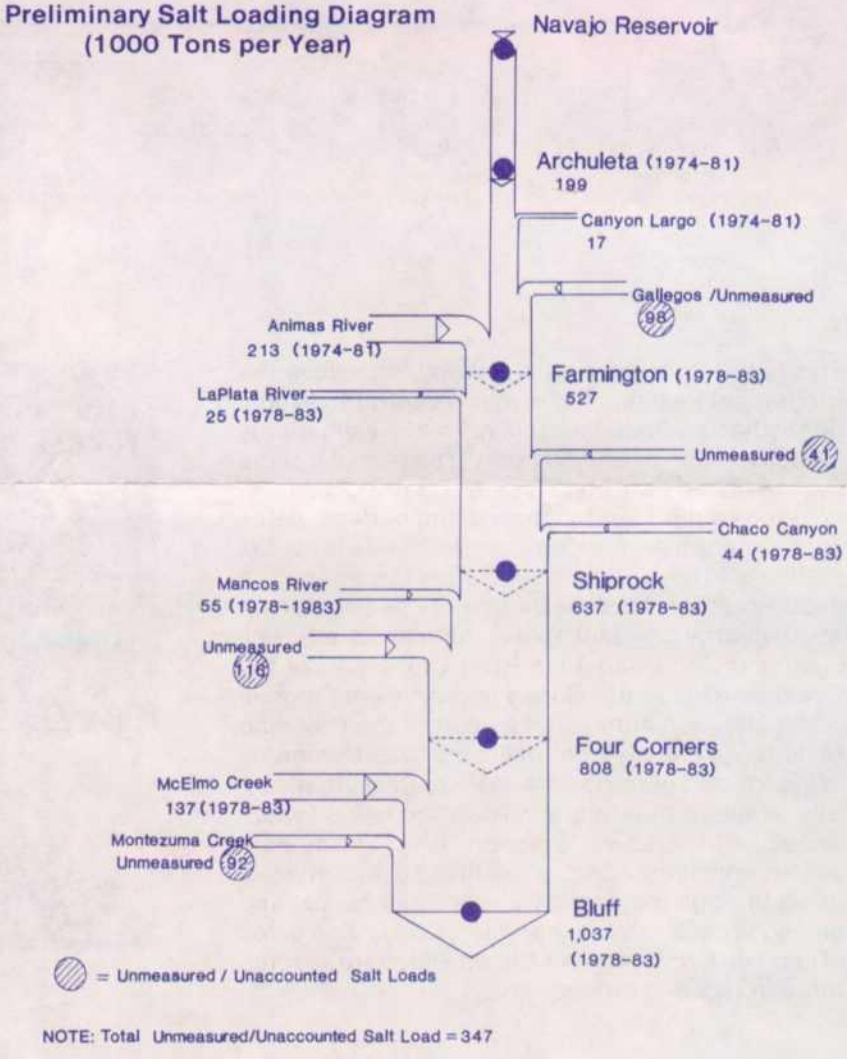
Data Collection and Plan Formulation 12/87

Planning Report, NEPA Document (National Environmental Policy Act of 1969) 9/89

End of Public Comment Period 12-89

Salt Contributions of San Juan River

Preliminary Salt Loading Diagram (1000 Tons per Year)



NOTE: Total Unmeasured/Unaccounted Salt Load = 347

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
DURANGO PROJECTS OFFICE
P.O. BOX 640
DURANGO, COLORADO 81302

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time	Date
		6-23-86

Originating Party	Other Parties
R. C. ANDERSON	JACK GENERAUX Bureau of Rec
	(303) 247-0247

Subject: Possibility of abandoned wells flowing brine into San Juan River Unit.

Discussion: I called Jack Generaux in response to his inquiry of the possibility of improperly plugged wells flowing produced water - contributing to salinity problems in the San Juan River Unit. The Bureau of Reclamation is conducting a survey to locate sources of salt discharges to the river. The survey identified some locations that appear to be oil/gas wells. He will send the locations of these three discharge points for OCD investigation.

Conclusions or Agreements:

Distribution:

Signed: R. Anderson